

**North Carolina Agricultural Research Service
North Carolina State University
Raleigh, North Carolina**

Notice of Release of NC 111F2(98) Tomato Breeding Line

NC 111F2(98) is a large-fruited, fresh market inbred tomato line which has the *I*, *I2*, and *I3* genes for resistance to races 1, 2 and 3 of fusarium wilt, respectively. It also has the *Ve* gene for resistance to verticillium wilt. It combines well in F₁ hybrids and is used as a parent in the codeveloped F₁ hybrid 'Amelia,' which has resistance to tomato spotted wilt virus, verticillium wilt, root knot nematodes and races 1, 2 and 3 of fusarium wilt.

NC 111F2(98) was developed through a breeding effort to combine the *I3* gene for fusarium wilt race 3 into a large fruited tomato line similar to NC 84173 PVP. NC 111F2(98) resulted from the cross of the fusarium wilt race 3 resistant Univ. of Florida tomato breeding line Fla. 7481 x NC 84173PVP (Fig. I). Single plant selections were made in the F₂ through F₆ generations. Seed were bulked in the F₇ generation to produce the F₈ generation. NC 111 F2(98) was released through a pollen transfer agreement to Clause Seed Company for testing as a parent in a cross with a Clause line having the *SW5* gene for tomato spotted wilt virus resistance and the *Mi* gene for nematode resistance. The multiple disease resistant hybrid from this cross was identified as having potential for commercial seed sales. NC 111F2(98) was subsequently transferred to Clause Seed Company through a seed transfer agreement for production of the hybrid 'Amelia' (HMX 0800), which has been successfully and widely marketed through Harris Moran Seed Co., a Limagrain group sister company of Clause. NC 111F2(98) has also been released to numerous other tomato breeders through seed transfer agreements with NC State University.

Plant type of NC 111F2(98) is medium determinate with noncurled leaves. The plant has dark green foliage and provides moderate cover to the fruit.. Fruit are large and firm in the ripe stage with a smooth ball shape, similar to those of NC 84173PVP. Fruit pedicels are jointless (*j2* gene). Resistance of NC 111F2(98) to fusarium wilt race 3 was confirmed in naturally infested field plots and in seedling rot dip inoculation tests in a growth chamber. Presence of a molecular marker linked to the *I3* gene in the line has also been confirmed. NC 111F2(98) has shown good combining ability in numerous experimental F₁ hybrid crosses and is useful for increasing fruit size and quality in F₁ hybrids with fusarium wilt race 3 resistance.

Breeder seed of NC 111F2(98) tomato breeding line are available by contacting Dr. Randy Gardner or Dr. Dilip Panthee, Mountain Horticultural Crops Research and Extension Center, 455 Research Drive, Mills River, NC 28759 or by telephone: 828.684.3562; fax: 828.684.8715; email addresses: randy_gardner@ncsu.edu or dilip_panthee@ncsu.edu. A fully executed tomato seed transfer agreement with NC State University's Office of Technology Transfer will be required to acquire seed of NC 111F2(98).

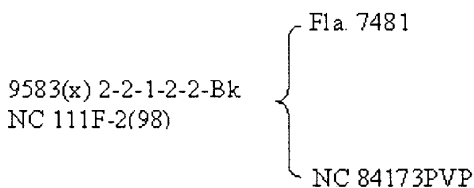


Fig. 1. Pedigree of NC 111F2(98) fusarium wilt race 3 resistant tomato breeding line.



Director, North Carolina Agricultural Research Service Date

11-5-09
Date